

D1 a ratio of at least about 5 to 1.

2. (Original) The apparatus of claim 1, wherein said plurality of zones have different gas flow rates.

4. (Thrice Amended) Apparatus comprising:

a sterilization tunnel for surrounding a plurality of containers with pressurized gas;

a sterilant supply source to supply sterilant into the sterilization tunnel;

D2 a control system, operatively attached to a plurality of sterilant concentration zones within the sterilization tunnel, for automatically adjusting the operational parameters of the tunnel, wherein the sterilant concentration levels in the plurality of sterilant concentration zones are maintained at a ratio of at least about 5 to 1;

at least one gas supply source to supply the pressurized gas into the sterilization tunnel; and

at least one gas exit to allow the pressurized gas to escape the sterilization tunnel.

D3 5. (Twice Amended) The apparatus of claim 3, further comprising at least one partition forming the plurality of sterilant concentration zones within the sterilization tunnel.

6. (Original) The apparatus of claim 3, wherein the gas is sterile air.

7. (Original) The apparatus of claim 3, wherein the sterilant is hydrogen peroxide.

8. (Original) The apparatus of claim 3, further including a product filler and a lidding apparatus opening into a sterile zone of the sterilization tunnel.

9. (Original) The apparatus of claim 8, wherein the concentration of the sterilant hydrogen peroxide is less than .5 ppm in the sterile zone.

10. (Original) The apparatus of claim 3, further including an interior bottle sterilization apparatus opening into a sterile zone of the sterilization tunnel.

11. (Original) The apparatus of claim 10, wherein the concentration of the sterilant hydrogen peroxide is about 1000 ppm in the sterile zone.

12. (Original) The apparatus of claim 3, further including an activation and drying apparatus opening into the sterilization tunnel.

13. (Original) The apparatus of claim 12, wherein the concentration of the sterilant hydrogen peroxide is about 3 ppm.

14. (Original) The apparatus of claim 3, further including a bottle discharge apparatus opening into the sterilization tunnel.

15 15. (Original) The apparatus of claim 14, wherein the concentration of the sterilant hydrogen peroxide is about .1 ppm.

16 16. (Original) The apparatus of claim 3, wherein the containers are bottles.

17. (Amended 4 Times) Apparatus comprising:

a sterilization tunnel for surrounding a plurality of containers with pressurized gas;

a sterilant supply source to supply sterilant into the sterilization tunnel;

a plurality of zones having a plurality of gas nozzles within the sterilization

tunnel;

at least one partition forming a plurality of sterilant concentration zones within the sterilization tunnel wherein the sterilant concentration levels of the plurality of sterilant

concentration zones are maintained at a ratio of at least about 5 to 1;

at least one gas supply source to supply the pressurized gas into the sterilization tunnel; and

at least one gas exit to allow the pressurized gas to escape the sterilization tunnel.

18 18. (Original) The apparatus of claim 17, further including at least one partition forming gas flow zones.

19 19. (Original) The apparatus of claim 18, wherein each partition comprises openings for

allowing objects to pass through each partition.

90 20. (Original) The apparatus of claim 17, wherein the pressurized gas is sterile air.

91 21. (Original) The apparatus of claim 17, wherein the sterilant is hydrogen peroxide.

92 22. (Original) The apparatus of claim 17, further including an activation and drying apparatus opening into a first of said gas flow zones.

93 23. (Original) The apparatus of claim 22, wherein sterile air enters the first gas flow zone at a rate of about 2400 cfm.

DS 24. (Amended) The apparatus of claim 23, wherein sterile air exits the first gas flow zone at a rate of about 1500 cfm.

25. (Original) The apparatus of claim 23, wherein sterile air exits the first gas flow zone at a rate of about 1500 cfm.

95 25. (Original) The apparatus of claim 17, further including a product filler and a lidding apparatus opening into a second of said gas flow zones of the sterilization apparatus.

96 26. (Original) The apparatus of claim 25, wherein sterile air enters the second gas flow zone at a

rate of about 1000 cfm.

27. (Original) The apparatus of claim 17, further including a bottle discharge apparatus opening into a third of said gas flow zones of the sterilization tunnel.

28. (Original) The apparatus of claim 27, wherein sterile air exits the third gas flow zone at a rate of about 100 cfm.

29. (Original) The apparatus of claim 17, further including a bottle infeed and sterilization apparatus with an opening into a fourth gas flow zone of the sterilization tunnel.

30. (Original) The apparatus of claim 29, wherein sterile air enters the infeed and sterilization apparatus at a rate of about 1800 cfm.

31. (Original) The apparatus of claim 29, wherein sterile air from the infeed and sterilization apparatus together with the fourth gas flow zone exits the infeed and sterilization apparatus at a rate of about 3600 cfm.

32. (Original) The apparatus of claim 17, wherein the containers are bottles.

33. (Thrice Amended) A method comprising:

providing a sterilization tunnel for surrounding a plurality of containers with

pressurized gas;

introducing sterilant from a sterilant supply source into the sterilization tunnel;

providing a plurality of sterilant concentration zones within the sterilization tunnel

wherein the sterilant concentration levels of the plurality of sterilant concentration zones are maintained at a ratio of at least about 5 to 1;

providing at least one partition for forming said sterilant concentration zones;

setting the level of sterilant concentration by a control system;

introducing pressurized gas from at least one gas supply source into the sterilization tunnel; and

allowing the pressurized gas to escape the sterilization tunnel.

34
35. (Amended) The method of claim 33, further comprising providing a control system operatively attached to the plurality of sterilant concentration zones within the sterilization tunnel.

36. (Original) The method of claim 33, wherein the step of introducing gas further comprises introducing sterile air.

37. (Original) The method of claim 33, wherein the sterilant is hydrogen peroxide.

37
38. (Twice Amended) Apparatus comprising:

means for providing a plurality of containers in a sterilization tunnel;

means for providing a plurality of sterilant concentration zones within the sterilization tunnel wherein the sterilant concentration levels of the plurality of sterilant concentration zones are maintained at a ratio of at least about 5 to 1; and

means for providing a plurality of gas flow rates within the sterilization tunnel.

D8 39. (Amended) The apparatus of claim 1, wherein the sterilant concentration levels of the plurality of sterilant concentration zones are maintained at a ratio of at least about 1,000 ppm to .1 ppm.

REMARKS

Claims 1-38 were originally pending. Applicant has previously canceled claims 4 and 34. Claim 39 was previously added. Thus, claims 1-3, 5-33, and 35-39 remain pending.

Claims 1, 3, 17, 33, 38 and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite with regards to the language "vary by at least a ratio of .1 ppm / .5 ppm". The applicant has appropriately amended the referenced claims to address the rejection.

Claims 1-2, 17-22, 27, 29, 33-34 and 36-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Kelbrick et al. Applicant respectfully traverses the rejection as follows. Kelbrick et al. does not teach each and every element of the present invention. Specifically, nowhere does Kelbrick et al. teach "the plurality of zones are maintained at a ratio of at least about 5 to 1", as recited in claim 1. Further, Kelbrick et al. does not teach "the plurality of sterilant concentration zones are maintained at a ratio of at least about 5 to 1", as recited in claims 3, 17, 33 and 38.

There is nothing in Kelbrick et al. disclosing any sterilant concentration levels in sterilant